

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Listing of Claims:

Claims 1-3 (Canceled).

Claim 4 (Currently Amended): A diffraction element comprising:

a substrate with an incoming-side surface opposite to an outgoing-side surface, the incoming-side surface configured to receive light external to the substrate;

an incoming-side diffraction grating having a concave/convex shape in cross-section disposed in a central region of the incoming-side surface;

a first outgoing-side diffraction grating having a concave/convex shape in cross-section disposed in the outgoing-side surface and configured to receive light diffracted by the incoming-side diffraction grating, a grating pitch of the incoming-side diffraction grating being substantially equal to a grating pitch of the first outgoing-side diffraction grating; and

a second outgoing-side diffraction grating covered by a reflective layer and having a concave/convex shape in cross-section, the second outgoing-side diffraction grating positioned on a light path of a light diffracted by said incoming-side diffraction grating,

wherein a width of the incoming-side diffraction grating is configured such that only a center portion of the external light, having a stronger intensity than a peripheral portion of the external light, is passed through the first incoming side diffraction grating.

Claim 5 (Previously Presented): The diffraction element according to Claim 4, wherein the second outgoing-side diffraction grating forms a reflection type diffraction grating.

Claim 6 (Previously Presented): The diffraction element according to Claim 5, wherein the second outgoing-side diffraction grating has a saw-tooth concave/convex portion or a pseudo sawtooth diffraction grating wherein a saw-tooth shape is approximated by stairs.

Claim 7 (Previously Presented): The diffraction element according to Claim 5, wherein the second outgoing-side diffraction grating comprises a pseudo sawtooth diffraction grating having a saw-tooth shape approximated by stairs, and a height or depth of a first step of the stairs is different from a height or depth of a second step of the stairs.

Claims 8-11 (Canceled).

Claim 12 (Currently Amended): A method of diffracting light with a diffraction element including diffraction gratings having concave/convex shapes in cross-section formed in an incoming-side surface and an outgoing-side surface of a transparent substrate, in which the incoming-side surface is opposite the outgoing-side surface, and the incoming-side surface is configured to receive light external to the diffraction gratings, the diffraction gratings including,

an incoming-side diffraction grating disposed in a central region of the incoming-side surface,

a first outgoing-side diffraction grating disposed in the outgoing-side surface and configured to receive light diffracted by the incoming-side diffraction grating, a grating pitch of the incoming-side diffraction grating being substantially equal to a grating pitch of the first outgoing-side diffraction grating, and

a second outgoing-side diffraction grating covered by a reflective layer, the second outgoing-side diffraction grating positioned on a light path of a light diffracted by said

incoming-side diffraction grating, the first and second outgoing-side diffraction gratings having a saw-tooth concave/convex portion or a pseudo sawtooth diffraction grating wherein a saw-tooth shape is approximated by stairs, and

wherein a width of the incoming-side diffraction grating is configured such that only a center portion of the external light, having a stronger intensity than a peripheral portion of the external light, is passed through the first incoming side diffraction grating, the method comprising:

directing to a wavelength measuring apparatus light diffracted by the first and second outgoing-side diffraction gratings.

Claim 13 (Previously Presented): The method according to claim 12, wherein the incoming-side diffraction grating has a saw-tooth shape.

Claim 14 (Currently Amended): A diffraction element comprising:

a substrate having first and second surfaces opposite one another;

a first diffraction grating disposed in a central portion of the first surface, the first diffraction grating configured to receive light from outside of the substrate, the first diffraction grating having a first grating pitch;

a second diffraction grating disposed in the second surface, the second diffraction grating configured to receive light diffracted by the first diffraction grating, the second diffraction grating having a second grating pitch substantially equal to the first grating pitch;
and

a third diffraction grating, covered by a reflective layer, disposed in the second surface, the third diffraction grating configured to receive light diffracted by the first diffraction grating, wherein

a width of the first diffraction grating is configured such that only a center portion of the light from the outside, having a stronger intensity than a peripheral portion of the light from the outside, is passed through the first diffraction grating.

Claim 15 (Previously Presented): The diffraction element according to Claim 4, wherein the incoming side diffraction grating and the first outgoing-side diffraction grating are arranged in a main axis of the external light, both diffraction gratings being centered on the substrate.

Claim 16 (Cancelled).